TECHNOLOGY NEEDS/OPPORTUNITIES STATEMENT

NON-DESTRUCTIVE ASSAY (NDA) OF CH TRUW TO MEET WIPP REQUIREMENTS FOR BURIAL BOXES - CERTIFICATION OF BOXED WASTE ASSAY SYSTEM (BWAS)

Identification No.: RL-MW025
Date: October 2001

Program: Mixed Waste
OPS Office/Site: Richland Operations Office/Hanford Site
PBS No.: RL-CP02
Waste Stream: 2121 – CH TRU to WRAP
TSD Title: 172 – Waste Receiving and Processing Facility
Operable Unit (if applicable): N/A
Waste Management Unit (if applicable): N/A.
Facility: 2336-W Waste Receiving and Processing Facility (WRAP).

Priority Rating:

This entry addresses the "Accelerated Cleanup: Paths to Closure (ACPC)" priority:

_X_ 1. Critical to the success of the ACPC.
____ 2. Provides substantial benefit to ACPC projects (e.g., moderate to high life-cycle cost savings or risk reduction, increased likelihood of compliance, increased assurance to avoid schedule delays).
____ 3. Provides opportunities for significant, but lower cost savings or risk reduction, and may reduce uncertainty in ACPC project success.

Need Title: Non-Destructive Assay (NDA) of Burial Boxes Containing CH TRUW.

Need/Opportunity Category: *Technology Opportunity* – The Site desires an alternative to the current baseline technology.

Need Description: Certify that the Boxed Waste Assay System (BWAS) NDA technology will meet CH TRUW Waste Isolation Pilot Plant (WIPP) requirements.

Schedule Requirements:

Earliest Date Required: 2004

Latest Date Required: 2006

The inventory quantities of boxed TRU waste will present opportunities for assay for WIPP shipment in this time frame (Currently not enough to make assay worthwhile).

Problem Description: Boxed CH-TRUW must be assayed in a certified NDA system before transporting to WIPP. The BWAS NDA equipment cannot be fully deployed without completing the certification process for WIPP shipments.

Potential Life-Cycle Cost Savings of Need (in $000s) and Cost Savings Explanation: Potential life cycle savings are estimated to $10,000K.

Benefit to the Project Baseline of Filling Need: Allow cost-effective certification of boxed waste for shipment to WIPP.

Relevant PBS Milestone: N/A

Functional Performance Requirements: The CH-TRUW NDA capability must be able to assay TRU elements and related isotopes inside burial boxes. Specific nuclides are: Pu-238, Pu-239, Pu-240, Am-241, Cs-137, Sr-90, U-233, Pu-242, U-238, and U-234.

Work Breakdown Structure (WBS) No.:	***TIP No.:***
1.02.02.04	N/A.

***Justification For Need*:**

Technical: Presently no NDA technology has been certified for burial boxes.

Regulatory: Must meet Transportation requirements.

Environmental Safety & Health: There are no occupational health concerns associated with processing CH waste using the box waste assay system (BWAS).

Cultural/Stakeholder Concerns: Increase the cost effectiveness of the cleanup. Meet milestones.

Other: None identified.

Current Baseline Technology: No certified technology currently exists for this need.

End-User: Waste Management Programs.

Contractor Facility/Project Manager: Robert Bloom, Fluor Hanford, Inc. (FH), (509) 373-2382, Fax (509) 372-1162, Robert_R_Bloom@rl.gov.

Site Technical Point-of-Contact: John Weidert, FH, (509) 376-8132, Fax (509) 373-3891, John_R_Weidert@rl.gov

DOE End-User/Representative Point-of-Contact: Kevin Leary, DOE-RL, (509) 373-7285, Fax (509) 372-1926, Kevin_D_Leary@rl.gov.

	Boxed CH TRUW
Waste volume, m^3	Existing: 7,099 m^3 Projected: TBD Total: 7,099 m^3
Waste form	Solid components in burial boxes
Waste stream I.D.	2121
Contaminants and co-contaminants	Specific nuclides of interest are: Pu-238, Pu-239, Pu-240, Am-241, Cs-137, Sr-90, U-233, Pu-242, U-238, and U-234.
Function of technology	Assay boxed CH TRUW to meet WIPP requirements
Source category	Various Hanford Site programs